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Henrich, Lorin M.
Smith, Jeffrey A.

<120> ERK7 and ERK8, Novel Diagnostic Markers for Cancer

<130> 00910-05

<150> US 60478,992

<151> 2003-06-17

<150> PCT/US2004/019181

<151> 2004-06-17

<160> 6

<170> PatentIn version 3.1

<210> 1

<211> 484

<212> PRT

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Arg Asp Lys Thr Asp Ala Gln Arg Thr Phe Arg Glu Ile Thr Leu Leu
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Gln Glu Phe Gly Asp His Pro Asn Ile Ile Ser Leu Leu Asp Val Ile
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Arg Ala Glu Asn Asp Arg Asp Ile Tyr Leu Val Phe Glu Phe Met Asp
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Thr Asp Leu Asn Ala Val Ile Arg Lys Gly Gly Leu Leu Gln Asp Val
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His Val Arg Ser Ile Phe Tyr Gln Leu Leu Arg Ala Thr Arg Phe Leu
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His Ser Gly His Val Val His Arg Asp Gln Lys Pro Ser Asn Val Leu
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Leu Asp Ala Asn Cys Thr Val Lys Leu Cys Asp Phe Gly Leu Ala Arg
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Ser Leu Gly Asp Leu Pro Glu Gly Pro Glu Asp Gln Ala Val Thr Glu
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 Tyr Val Ala Glu Asp Leu Leu Ala Leu Gly Ser Gly Cys Arg Ala Ser
 180 185 190
 Val Leu His Gln Leu Gly Ser Arg Pro Arg Gln Thr Leu Asp Ala Leu
 195 200 205
 Leu Pro Pro Asp Thr Ser Pro Glu Ala Leu Asp Leu Leu Arg Arg Leu
 210 215 220
 Leu Val Phe Ala Pro Asp Lys Arg Leu Ser Ala Thr Gln Ala Leu Gln
 225 230 235 240
 His Pro Tyr Val Gln Arg Phe His Cys Pro Ser Asp Glu Trp Ala Arg
 245 250 255
 Glu Ala Asp Val Arg Pro Arg Ala His Glu Gly Val Gln Leu Ser Val
 260 265 270
 Pro Glu Tyr Arg Ser Arg Val Tyr Gln Met Ile Leu Glu Cys Gly Gly
 275 280 285
 Ser Ser Gly Thr Ser Arg Glu Lys Gly Pro Glu Gly Val Ser Pro Ser
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 Gln Ala His Leu His Lys Pro Arg Ala Asp Pro Gln Leu Pro Ser Arg
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 Thr Pro Val Gln Gly Pro Arg Pro Arg Pro Gln Ser Ser Pro Gly His
 325 330 335
 Asp Pro Ala Glu His Glu Ser Pro Arg Ala Ala Lys Asn Val Pro Arg
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 Gln Asn Ser Ala Pro Leu Leu Gln Thr Ala Leu Leu Gly Asn Gly Glu
 355 360 365
 Arg Pro Pro Gly Ala Lys Glu Ala Pro Pro Leu Thr Leu Ser Leu Val
 370 375 380
 Lys Pro Ser Gly Arg Gly Ala Ala Pro Ser Leu Thr Ser Gln Ala Ala
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 405 410 415
 Gly Gly Val Arg Val Ala Ser Val Gln Gln Val Pro Pro Arg Leu Pro
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Pro Glu Ala Arg Pro Gly Arg Arg Met Phe Ser Thr Ser Ala Leu Gln
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 35 40 45

Phe Arg Asp Gln Thr Asp Ala Gln Arg Thr Phe Arg Glu Ile Met Leu
 50 55 60

Leu Arg Glu Phe Gly Gly His Pro Asn Ile Ile Arg Leu Leu Asp Val
 65 70 75 80

Ile Pro Ala Lys Asn Asp Arg Asp Ile Tyr Leu Val Phe Glu Ser Met
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Asp Thr Asp Leu Asn Ala Val Ile Gln Lys Gly Arg Leu Leu Glu Asp
 100 105 110

Ile His Lys Arg Cys Ile Phe Tyr Gln Leu Leu Arg Ala Thr Lys Phe
 115 120 125

Ile His Ser Gly Arg Val Ile His Arg Asp Gln Lys Pro Ala Asn Val
 130 135 140

Leu Leu Asp Ala Ala Cys Arg Val Lys Leu Cys Asp Phe Gly Leu Ala
 145 150 155 160

Arg Ser Leu Ser Asp Phe Pro Glu Gly Pro Gly Gly Gln Ala Leu Thr
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Glu Tyr Val Ala Thr Arg Trp Tyr Arg Ala Pro Glu Val Leu Leu Ser

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Ser Arg Trp Tyr Thr Pro Gly Val Asp Met Trp Ser Leu Gly Cys Ile
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Leu Gly Glu Met Leu Arg Gly Gln Pro Leu Phe Pro Gly Thr Ser Thr
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Phe His Gln Leu Glu Leu Ile Leu Glu Thr Ile Pro Leu Pro Ser Met
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Glu Glu Leu Gln Gly Leu Gly Ser Asp Tyr Ser Ala Leu Ile Leu Gln
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Asn Leu Gly Ser Arg Pro Arg Gln Thr Leu Asp Ala Leu Leu Pro Pro
 260 265 270

Asp Thr Pro Pro Glu Ala Leu Asp Leu Leu Lys Arg Leu Leu Ala Phe
 275 280 285

Ala Pro Asp Lys Arg Leu Ser Ala Glu Gln Ala Leu Gln His Pro Tyr
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Val Gln Arg Phe His Cys Pro Asp Arg Glu Trp Thr Arg Gly Ser Asp
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Val Arg Leu Pro Val His Glu Gly Asp Gln Leu Ser Ala Pro Glu Tyr
 325 330 335

Arg Asn Arg Leu Tyr Gln Met Ile Leu Glu Arg Arg Arg Asn Ser Arg
 340 345 350

Ser Pro Arg Glu Glu Asp Leu Gly Val Val Ala Ser Arg Ala Glu Leu
 355 360 365

Arg Ala Ser Gln Arg Gln Ser Leu Lys Pro Gly Val Leu Pro Gln Val
 370 375 380

Leu Ala Glu Thr Pro Ala Arg Lys Arg Gly Pro Lys Pro Gln Asn Gly
 385 390 395 400

His Gly His Asp Pro Glu His Val Glu Val Arg Arg Gln Ser Ser Asp
 405 410 415

Pro Leu Tyr Gln Leu Pro Pro Pro Gly Ser Gly Glu Arg Pro Pro Gly
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Ala Thr Gly Glu Pro Pro Ser Ala Pro Ser Gly Val Lys Thr His Val
 435 440 445

Arg Ala Val Ala Pro Ser Leu Thr Ser Gln Ala Ala Ala Gln Ala Ala

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455

460

Asn Gln Pro Leu Ile Arg Ser Asp Pro Ala Arg Gly Gly Gly Pro Arg
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Glu Pro Arg Pro Gly Arg Arg Met Phe Gly Ile Ser Val Ser Gln Gly
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 35 40 45

Phe Arg Asp Gln Ile Asp Ala Gln Arg Thr Phe Arg Glu Ile Met Leu
 50 55 60

Leu Lys Glu Phe Gly Gly His Pro Asn Ile Ile Arg Leu Leu Asp Val
 65 70 75 80

Ile Pro Ala Lys Asn Asp Arg Asp Ile Tyr Leu Val Phe Glu Ser Met
 85 90 95

Asp Thr Asp Leu Asn Ala Val Ile Gln Lys Gly Arg Leu Leu Lys Asp
 100 105 110

Ile His Lys Arg Cys Ile Phe Tyr Gln Leu Leu Arg Ala Thr Lys Phe
 115 120 125

Ile His Ser Gly Arg Val Ile His Arg Asp Gln Lys Pro Ala Asn Val
 130 135 140

LanniganERK.US.ST25.txt

Leu Leu Asp Ser Ala Cys Arg Val Lys Leu Cys Asp Phe Gly Leu Ala
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Arg Ser Leu Gly Asp Leu Pro Glu Gly Pro Gly Gly Gln Ala Leu Thr
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180 185 190

Ser Arg Trp Tyr Thr Pro Gly Val Asp Met Trp Ser Leu Gly Cys Ile
195 200 205

Leu Gly Glu Met Leu Arg Gly Gln Pro Leu Phe Pro Gly Thr Ser Thr
210 215 220

Phe His Gln Leu Glu Leu Ile Leu Lys Thr Ile Pro Leu Pro Ser Met
225 230 235 240

Glu Glu Leu Gln Asp Leu Gly Ser Asp Tyr Ser Ala Leu Ile Leu Gln
245 250 255

Asn Leu Gly Ser Arg Pro Gln Gln Thr Leu Asp Ala Leu Leu Pro Pro
260 265 270

Asp Thr Pro Pro Glu Ala Leu Asp Leu Leu Lys Arg Leu Leu Ala Phe
275 280 285

Ala Pro Asp Lys Arg Leu Ser Ala Glu Gln Ala Leu Gln His Pro Tyr
290 295 300

Val Gln Arg Phe His Cys Pro Asp Arg Glu Trp Ala Arg Glu Ser Asp
305 310 315 320

Val Arg Leu Pro Val His Glu Gly Asp Gln Leu Ser Ala Pro Glu Tyr
325 330 335

Arg Lys Arg Leu Tyr Gln Ile Ile Leu Glu Gln Ser Gly Asn Ser Arg
340 345 350

Ser Pro Arg Glu Glu Gly Leu Gly Val Val Ala Ser Arg Ala Glu Leu
355 360 365

Arg Ala Ser Pro Ala Arg Thr Gln Ser Leu Lys Ser Gly Val Leu Pro
370 375 380

Gln Val Pro Ala Glu Thr Pro Ala Arg Lys Arg Gly Pro Lys Pro Pro
385 390 395 400

Arg Ser Pro Gly His Asp Pro Glu His Val Glu Val Arg Arg Gln Ser
405 410 415

LanniganERK.US.ST25.txt

Ser Asp Pro Leu Phe Gln Leu Pro Pro Pro Gly Arg Gly Glu Arg Pro
420 425 430

Pro Gly Ala Thr Gly Gln Pro Pro Ser Ala Pro Ser Gly Val Lys Thr
435 440 445

Gln Val Arg Ala Met Ala Pro Ser Leu Thr Ser Gln Ala Glu Ala Gln
450 455 460

Ala Ala Asn Gln Ala Leu Ile Arg Ser Asp Pro Ala Arg Gly Gly Gly
465 470 475 480

Pro Arg Ala Val Gly Ala Arg Arg Val Pro Ser Arg Leu Pro Arg Glu
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Ala Pro Glu Pro Arg Pro Gly Arg Arg Met Phe Gly Ile Ser Val Ser
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Gln Gly Ala Gln Gly Ala Ala Arg Ala Ala Leu Gly Gly Tyr Ser Gln
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